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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,306	09/13/2000	Katsuaki Abe	P19976	7749
7055	7590	03/18/2005		
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/661,306	Applicant(s) ABE ET AL.	
	Examiner Kevin M. Burd	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-27 is/are allowed.
- 6) ☒ Claim(s) 28-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the remarks filed 11/12/2004, is a non-final office action.

Response to Arguments

2. Applicant's arguments see the remarks on pages 13-21, filed 11/12/2004, with respect to the rejections of the claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of Powel, II et al (US 6,130,920; Snyder et al (US 5,563,596); Yamato (US 5,369,668) and Shimizu (US 5,886,844). These rejections are stated below. Claims 20-27 are allowed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 28, 29, 34, 36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Powell, II et al (US 6,130,920).

Regarding claims 28, 34, 36 and 37, Powell discloses a receiver shown in figure

2. The receiver samples the received signal at an initial sampling point (column 3, lines

10-16). An operator determines a correlation between the received signal and a known sequence in the series of correlators 736. These correlators estimate a first timing of the received signal. An "operation value ratio table" is generated comprising a MAX INDEX value. Blocks 35 and 36 receive the correlator's output and the MAX INDEX signal as shown in figure 2. The circuits provide an adjustment signal and the processor further adjusts a subsequent symbol's synchronization clock (column 3, lines 25-31). These components make up the second estimator.

Regarding claim 29, The MAX INDEX value is used to determine the best sampling instance (column 3, lines 45-48) and is constantly updated for each subsequent signal

4. Claim 33 is rejected under 35 U.S.C. 102(b) as being anticipated by Snyder et al (US 5,563,596).

Regarding claim 33, Snyder discloses a reception apparatus in figure 1. The first converter digitizes the input waveform 14 at a rate indicated by the clock signal 22 from a connected clock 24 (column 2, lines 8-10). This sampling is the first timing estimation. A second converter 30 receives a shifted waveform 32 and the shifted waveform consists of the input waveform 14 after it has been shifted by 180 degrees. The second converter digitizes the shifted waveform by first sampling the waveform 32 at the rate indicated by the clock signal 22' from the connected clock 24 (column 2, lines 13-21). This sampling is the second timing estimation. The digital adder 28 produces a series of samples at its output by subtracting each sample in the second series from a

corresponding sample in the first series (column 2, lines 48-51). The output 38 is thus a scaled and digitized representation of the input waveform (column 2, lines 55-56). The adder 38 is the third estimation means which is generated from the first and second estimation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Powell, II et al (US 6,130,920) in view of Yamamoto (US 5,369,668) further in view of Shimizu (US 5,886,844).

Regarding claim 30, Powell discloses the receiver as stated in paragraph 3. Powell does not disclose the receiver comprises a tap coefficient table and a canceller that cancels inter symbol interference. Yamamoto discloses a receiver that samples a received signal as shown in figure 1. The receiver comprises correlators that update the tap coefficients to remove intersymbol interference (ISI) (column 4, line 57 to column 5, line 7). The correlators attempt to synchronize the incoming signal with the receiver by changing the tap coefficients in the receiver of figure 1 (column 3, lines 6-10). Yamamoto does not disclose a tap coefficient table that stores tap coefficients. Shimizu discloses using a tap coefficient table for updating tap coefficients in figures 4 and 5.

The stored tap coefficients will be used when the appropriate address signal is received (column 12, lines 28-50). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the tap coefficient table of Shimizu into the receiver of Yamamoto. By using the table, the tap coefficients can be calculated before hand and minimize the computations during signal reception.

6. Claims 31, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 5,369,668) in view of Shimizu (US 5,886,844).

Regarding claims 31 and 35, Yamamoto discloses a receiver that samples a received signal as shown in figure 1. The receiver comprises correlators that update the tap coefficients to remove intersymbol interference (ISI) (column 4, line 57 to column 5, line 7). The correlators attempt to synchronize the incoming signal with the receiver by changing the tap coefficients in the receiver of figure 1 (column 3, lines 6-10).

Yamamoto does not disclose a tap coefficient table that stores tap coefficients. Shimizu discloses using a tap coefficient table for updating tap coefficients in figures 4 and 5.

The stored tap coefficients will be used when the appropriate address signal is received (column 12, lines 28-50). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the tap coefficient table of Shimizu into the receiver of Yamamoto. By using the table, the tap coefficients can be calculated before hand and minimize the computations during signal reception.

Regarding claim 32, Yamamoto discloses a demodulator shown in figure 1.

Allowable Subject Matter

Claims 20-27 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd
3/16/2005

**KEVIN BURD
PRIMARY EXAMINER**